Pituitary Apoplexy

UNC Morning Report

2/9/05
Sellar Masses

- Typically present in three ways:
  - Neurologic (vision changes or headache)
  - Incidental radiographic finding
  - Hormonal Excess or deficiency

- Pituitary Adenoma is the most common sellar mass presenting after age 30.
- **Microadenoma** is less than 1 cm
- **Macroadenoma** is greater than 1 cm
- Masses can result in hormone excess or deficiency
  - Gonadotrophs (leutinizng hormone, FSH)
  - Thyrotrophs (elevated TSH)
  - Lactotrophs (elevated prolactin and hypogonadism)
  - Somatotrophs (acromegaly)
  - Corticotrophs (cushings syndrome)
Also consider other causes

- Craniopharyngioma (rathkes pouch remnant)
- Menigioma
- Germ cell tumor
- Sarcoma
- Lymphoma
- Metastasis (breast and lung cancer)
- Cavernous sinus AV fistula
**Sellar Mass Clinical Presentation**

- Headache and impaired vision is most common
- Optic chiasm compression causing bitemporal hemianopsia
- Diplopia from oculomotor compression
- Most common hormone deficiency is Leutinizing Hormone.
  - Males have low testosterone, decreased libido
  - Females have amenorrhea
Bitemporal Hemianopsia

Vision Loss

Lesion is Here

Vision Loss

Optic Chiasm

Lesion is Here
Evaluation

- MRI is the best choice of imaging
- Check for hormone changes
  - Serum Prolactin >200
  - Insulin like growth factor I for acromegaly
  - Elevated 24hr cortisol with an elevated ACTH
  - Elevated or decreased TSH
  - Check testosterone in males, Estradiol in females
- Incidentaloma
  - >10mm need to check hormones as above
  - <10mm and no symptoms just check a prolactin
Pituitary Apoplexy

- Bleeding into the pituitary gland
  - Usually involves bleeding into an adenoma

- Typical presentation (mild symptoms to sudden death)
  - Sudden onset of severe HA, diplopia, and hypopituitarism
  - Low ACTH and cortisol being the most worrisome and life threatening
  - Also can see fever, menigism, altered mental status and N/V.
Possible Causes

- Tumor outgrows blood supply, infarcts and bleeds
- Hypotension
- Increased ICP
- Radiation
- Pregnancy
- Anticoagulated state
- Gland stimulation
  - Giving gonadotropin releasing hormone, thyrotropin releasing hormone, corticotropin releasing hormone
Differential Diagnosis

- Subarachnoid bleed
- Menigitis
- Encephalitis
- Optic neuritis
- Stroke
- Sinusitis
- Cavernous sinus thrombosis
Diagnose with an MRI

- Average adenoma size with a bleed was 2.5 cm

Management

- High dose corticosteroid replacement
- Surgical vs Conservative management
  - Resolution of neuro and hormonal symptoms can occur with surgical decompression, blood resorption, steroids or dopamine agonist in prolactinoma
  - Transphenoidal approach is optimal
To cut or not to cut

- Symptoms have a better chance of improvement if patients are operated on within the first week.
- Vision loss is considered indication for emergent surgery.
- Most surgeons will operate if
  - Any change in vision
  - Change in mental status
- Some advocate conservative management with steroids or dopamine agonist if symptoms are mild.
Pituitary Apoplexy Masquerading as Meningoencephalitis

- Several case reports in the literature
- Typically patients present with HA and N/V
- LP shows 100-500 WBC, 90% PMN’s, elevated RBS and Protein.
- Patient is placed on empiric ABX and Cultures do not grow anything
- Repeat head imaging shows the pituitary bleed.
So why the WBCs??

Best guess is that when a bleed occurs in the necrotic center of an adenoma this spills blood, necrotic tissue and PMN’s out into the CSF.

Causing fever, HA, and MS changes.
References

- Uptodate 2005.